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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BECK, LERON

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,022	Applicant(s) BELLERS ET AL.	
	Examiner LERON BECK	Art Unit 4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/1/2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Invoking - 35 USC § 112, 6th

1. The following is a quotation of the sixth paragraph of 35 U.S.C. 112:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof

2. Claims 10-13 invokes 35 USC § 112, 6th because the claim limitation meets the 3-prong test by using the phrase “means for” or “step for”, the “means for” or “step for” is modified by functional language, and the phrase “means for” or “step for” is not modified by sufficient structure, material, or acts for achieving the specified function. Therefore, the claim limitation is being treated under 35 U.S.C. 112, sixth paragraph

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 10, 11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US2002/0116715A1 APOSTOLOPOULOS.
5. **As to claim 1, (Currently Amended) Apostolopoulos discloses a method of transmitting a progressive (meaning that each frame is encoded as a single image) video sequence comprising (see Fig. 2, and Fig. 3):**
- interlacing the video signal** (Fig. 2, an interlaced signal contains the two fields of a video frame shot at two different times. Therefore, given the broadest reasonable interpretation, element 220 shows a

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video stream (signal) being split into two sub streams (interlaced into different fields or lines) [0049], Fig.3, element 330 [0130]; Given the broadest reasonable interpretation, Apostolopoulos teaches interlacing video signal as separating frames into odd and even series of frames); **separating the video signal into multiple streams of video signals** (Fig. 2, element 220, [0049]; Fig.3, element 330 [0055])

encoding the streams of video signals using a plurality of encoders (See Fig. 3, elements 314 and 316, [0057] and [0058]; **and**

transmitting the separate streams of encoded signals to a network (See Fig. 3, element 330, [0055], lines 1-2; [0061].

6. **Regarding claim 2, (Currently Amended) the method of claim 1, wherein the step of separating the video signal into multiple streams comprises separating the video signal into a stream of odd fields and a stream of even fields** (Fig.3, element 350 AND 352, [0055]);.

7. **Regarding Claim 3,(Currently Amended) Apostolopoulos discloses a method of receiving a progressive video sequence comprising** (see Fig. 2, and Fig. 3):

receiving separate streams of encoded signals from a network (see Fig.3, element 332; the receiver 332 is receiving separate streams 356 and 354);

decoding the separate streams of video signals using a plurality of decoders (See Fig. 3, elements 320 and 322; [0062];

de-interlacing the video signals using a de-interlacer and

regrouping the streams to form a progressive video sequence (See Fig. 2, element 294, [0050], lines 6-9, Fig. 3, element 324, [0067]; The de-interlacer performs the opposite of the interlacer. Also, Apostolopoulos' term "reconstructing" is equivalent to applicant's term "regrouping").

8. **Regarding claim 4, (Currently Amended) the method of claim 3, wherein the progressive video sequence comprises a series of video images and wherein the de-interlacer reconstructs a corrupted image based on one or multiple received neighboring images** ([0050], lines 6-9, [0065], lines 5-9, Fig. 3, element 324 and 344, [0067]; The de-interlacer performs the opposite of the interlacer. Also, the examiner concludes that if a signal is in series, then it is next to each other sequentially, which means that they are neighboring).

9. **Regarding claim 5, (Currently Amended) the method of claim 4, wherein the de-interlacer reconstructs the corrupted signal** ([0065], lines 5-9, Fig. 3, element 324 and 344, [0067]; The de-interlacer performs the opposite of the interlacer) **using temporal information from the received signals** ([0068]; The term "merge block" refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information).

10. **Regarding claim 6, (Currently Amended) The method of claim 3, wherein the de-interlacer reconstructs the corrupted signal** ([0065], lines 5-9, Fig. 3, element 324 and 344, [0067]; The de-interlacer performs the opposite of the interlacer) **using spatial** ([0130], lines 1-4) **and temporal information from the received signals** ([0068]; The term "merge block" refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information).

11. **Regarding claim 7, (Currently Amended) Apostolopoulos discloses an improved method of receiving progressive video comprising:**

receiving the encoded streams at a receiver (See Fig. 3, element 332; [0062]);
decoding the received streams of video (See Fig.3, elements 320 and 322, [0062]); **and**
reconstructing (See Fig. 9, element 920) **any portions of missing fields using de-interlacing algorithms** (See Fig. 9, element 960; Apostolopoulos teachings of "estimating a lost frame(field)" is equivalent to applicant's "missing fields using de-interlacing algorithms"....The algorithm is done during estimation. Also a de-interlacer is capable of reconstructing an image. Furthermore, [0065], lines 7-9; Apostolopoulos teachings of "add" with respect to an error signal is equivalent to applicant's de-interlacing algorithm).

12. **Regarding Claim 10, (Currently Amended) Apostolopoulos discloses a device for communicating a progressive video sequence to a network comprising** (see Fig. 3, element 318):

means for interlacing the video sequence (See Fig 3, element 312);
means for splitting the interlaced sequence into multiple streams of signals (See Fig 3, element 312);

means for separately encoding the multiple streams of signals (See Fig 3, elements 316 and 314); **and**

means for transmitting the multiple streams of encoded signals over independent channels (See Fig. 3, elements 330, 356, and 354).

13. **Regarding claim 11, (Currently Amended) Apostolopoulos discloses a device for receiving a progressive video sequence from a network comprising** (See Fig. 3, element 332):

means for receiving multiple streams of encoded signals (See Fig. 3, element 332);

means for separately decoding the multiple streams of signals (See Fig 3, elements 320 and 322);

means for de-interlacing the decoded streams of signals (See fig. 3, element 324); **and**

means for regrouping the decoded streams into the video sequence (See fig. 3, element 324).

14. **Regarding claim 14, (Currently Amended) the receiver (See Fig. 3, element 332) of claim 11, wherein de-interlacing** (See fig. 3, element 324) **is performed to reconstruct a signal that was corrupted signal** (See Fig. 3, [0068], and [0065]; The term "merge block" in fig 3, element 324, refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information) **during its transmission over the network** (See Fig. 3, element 330; Element 330 transmits even and odd signals).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 8, 9, 12, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over US2002/0116715A1 APOSTOLOPOULOS in view of US Patent 6618094B1 De Haan et al (Hereinafter referred to as "De Haan").

17. **In regards to claim 8, Apostolopoulos discloses the method of claim 7, wherein the de-interlacing algorithms employ**

spatial ([0130], lines 1-4) **and temporal information from the received streams to reconstruct** (See Fig. 3, [0068]; The term "merge block" in fig 3, element 324, refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information) **the missing fields** (See Fig. 9, element 960; Apostolopoulos teachings of "estimating a lost frame(field)" is equivalent to applicant's "missing fields" .

Apostolopoulos doesn't disclose that both spatial **and** temporal are possibly employed.

De Haan discloses the de-interlacing algorithms employ spatial and temporal information

(Column 5, lines 1-7; Given the broadest reasonable interpretation, De Haan Teachings of the term "no majority of de-interlacing algorithms copying a single spatio-temporally neighboring pixel".... is equivalent with the present application's teachings of "spatial and temporal" because the examiner interprets that no majority doesn't exclude all. This just means that the majority can't copy a single spatio and temporally neighboring pixel and **SOME** can).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the De Haan's use of spatial and temporal information with Apostolopoulos de-interlacing algorithms with reasonable expectation that this would result in low cost and improved performance (De Haan, Column 4, line 49-65). This method for employing spatial and temporal information was within the ordinary ability of one of ordinary skill in the art based on the teachings of De Haan.

In the same field of endeavor, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the teachings of De Haan and Apostolopoulos in order to obtain the invention as specified in claim 8.

18. **Regarding claim 9, (Currently Amended) the method of claim 8, wherein the step of separating the video comprises separating the video into a stream of odd fields and a stream of even fields wherein the odd fields comprise odd scanning lines of the video and the even fields comprise even scanning lines of the video** (See Fig. 3, element 330, [0130]; During transmission,

signal are interlaced. This technique uses two fields to create a frame. One field contains all the odd scanned lines in the image; the other contains all the even scanned lines of the image).

19. **Regarding claim 12, Apostolopoulos discloses the device of claim 11, wherein the means for de-interlacing** (See fig. 3, element 324); **uses temporal information to reconstruct a corrupted signal** (See Fig. 3, [0068]; the term "merge block" in fig 3, element 324, refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information).

Apostolopoulos doesn't disclose that both spatial **and** temporal are possibly used.

De Haan discloses the means for de-interlacing uses spatial and temporal information (Column 5, lines 1-7; Given the broadest reasonable interpretation, De Haan Teachings of the term "no majority of de-interlacing algorithms copying a single spatio-temporally neighboring pixel".... is equivalent with the present application's teachings of "spatial and temporal" because the examiner interprets that no majority doesn't exclude all. This just means that the majority can't copy a single spatio and temporally neighboring pixel. However, SOME can).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the De Haan's use of spatial and temporal information with Apostolopoulos de-interlacing means with reasonable expectation that this would result in low cost and improved performance (De Haan, Column 4, line 49-65). This means for de-interlacing use of spatial and temporal information was within the ordinary ability of one of ordinary skill in the art based on the teachings of De Haan.

In the same field of endeavor, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the teachings of De Haan and Apostolopoulos in order to obtain the invention as specified in claim 12.

20. **Regarding claim 13, Apostolopoulos discloses the device of claim 11, wherein the means for de-interlacing** (See fig. 3, element 324) **uses spatial** ([0130], lines 1-4) **and temporal information from the received corrupted signals** (See Fig. 3, [0068]; the term "merge block" in fig 3, element 324, refers to applicant's "de-interlacer", which uses temporal filtering to filter temporal information).

Apostoloupos doesn't disclose that both spatial **and** temporal are possibly used.

De Haan discloses the means for de-interlacing uses spatial and temporal information

(Column 5, lines 1-7; Given the broadest reasonable interpretation, De Haan Teachings of the term "no majority of de-interlacing algorithms copying a single spatio-temporally neighboring pixel".... is equivalent with the present application's teachings of "spatial and temporal" because the examiner interprets that no majority doesn't exclude all. This just means that the majority can't copy a single spatio and temporally neighboring pixel. However, SOME can).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the De Haan's use of spatial and temporal information with Apostolopoulos de-interlacing means with reasonable expectation that this would result in low cost and improved performance (De Haan, Column 4, line 49-65). This means for de-interlacing use of spatial and temporal information was within the ordinary ability of one of ordinary skill in the art based on the teachings of De Haan.

In the same field of endeavor, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the teachings of De Haan and Apostolopoulos in order to obtain the invention as specified in claim 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LERON BECK whose telephone number is (571)270-1175. The examiner can normally be reached on Monday-Friday 7:30AM-5PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LERON BECK/
Examiner, Art Unit 4183

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Examiner, Art Unit 4183*

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